WHAT IS CLAIMED IS:

1. A system for compensating for unwanted modes in multimode fiber transmissions, comprising:

a detector that receives an optical signal transmitted through a multimode optical fiber and converts the transmitted optical signal to a detector signal; and

an adaptive equalizer that generates an adaptive equalizer signal that, when combined with the detector signal, compensates for unwanted modes in the detector signal.

2. The system of claim 1, wherein the unwanted modes in the detector signal are caused by differential mode dispersion effects in the multimode optical fiber.

3. The system of claim 1, wherein the adaptive equalizer comprises a finite impulse response filter with adjustable coefficients.

4. The system of claim 1, further comprising an adder that combines the detector signal with the adaptive equalizer signal.

5. The system of claim 4, further comprising a decision element that receives the combined detector and adaptive equalizer signal, determines a symbol represented by the combined signal, and outputs the determined symbol as an output signal.

6. The system of claim 5, wherein at least a portion of the output signal is sent to the adaptive equalizer as a feedback signal, wherein the adaptive equalizer generates the adaptive equalizer signal based on the feedback signal.

7. The system of claim 6, wherein the adaptive equalizer comprises:

at least one delay element in series, wherein a first of the at least one delay element receives the feedback signal;

a respective amplifier for each delay element, wherein each amplifier receives a delayed signal from its respective delay element and multiplies the delayed signal by a weight; and

an adder that combines weighted signals from each of the amplifiers and outputs the combined weighted signals as the adaptive equalizer signal.

8. The system of claim 7, wherein the at least one delay element comprises a delay element for each unwanted mode in the detector signal.

9. The system of claim 7, further comprising a weight updater that, during a training mode, determines a weight for each amplifier.

10. The system of claim 8, wherein the weight updater determines each weight based on a difference between the determined symbol and a symbol transmitted by the multimode optical fiber.

11. The system of claim 8, wherein the weight updater determines each weight based on a difference between the determined symbol and a known property of a symbol transmitted by the multimode optical fiber.

12. The system of claim 9, wherein the weight updater determines each weight using a least mean square algorithm.

13. A system for compensating for unwanted modes in multimode fiber transmissions, comprising:

detector means for receiving an optical signal transmitted through a multimode optical fiber and converting the transmitted optical signal to a detector signal; and

equalizer means for generating an equalizer signal that, when combined with the detector signal, compensates for unwanted modes in the detector signal.

14. The system of claim 13, wherein the unwanted modes in the detector signal are caused by differential mode dispersion effects in the multimode optical fiber.

15. The system of claim 13, further comprising combining means for combining the detector signal and the equalizer signal.

16. The system of claim 15, further comprising decision means for receiving the combined detector and equalizer signal, determining a symbol represented by the combined signal, and outputting the determined symbol as an output signal.

17. The system of claim 16, wherein a portion of the output signal is sent to the equalizer means as a feedback signal, wherein the equalizer means derives the equalizer signal based on the feedback signal.

18. The system of claim 17, wherein the equalizer means comprises:

delay means for receiving and delaying the feedback signal;

amplifying means for receiving the delayed feedback signal from the delay means and multiplying the delayed feedback signal by at least one weight; and

combining means for combining weighted signals from the amplifying means and outputting the combined weighted signals as the equalizer signal.

19. The system of claim 18, further comprising weight updating means for, during a training mode, determining the at least one weight.

20. The system of claim 19, wherein the weight updating means determines the weights using a least mean square algorithm.

21. A system for compensating for differential mode dispersion effects in multimode fiber transmissions, comprising:

a detector that receives an optical signal transmitted through a multimode optical fiber and converts the transmitted optical signal to a detector signal;

a decision element that receives the detector signal, determines a symbol represented by the detector signal, and outputs the determined symbol as an output signal;

an adaptive equalizer that receives at least a portion of the output signal as a feedback signal and generates an adaptive equalizer signal based on the feedback signal; and

an adder that combines the detector signal with the adaptive equalizer signal, thereby compensating for unwanted modes in the detector signal caused by differential mode dispersion in the multimode optical fiber.

22. A fiber optic data channel, comprising:

a multimode optical fiber that transmits an optical signal;

a detector that receives the optical signal transmitted through the multimode optical fiber and converts the transmitted optical signal to a detector signal;

an adaptive equalizer that generates an adaptive equalizer signal that, when combined with the detector signal, compensates for unwanted modes in the detector signal; and

an adder that combines the adaptive equalizer signal with the detector signal.

23. The fiber optic data channel of claim 22, wherein the unwanted modes are caused by differential mode dispersion in the multimode optical fiber.

24. A fiber optic data network comprising the fiber optic channel of claim 22.

25. A method of compensating for unwanted modes in multimode fiber transmissions, comprising the steps of:

converting an optical signal transmitted through a multimode optical fiber to an electrical signal;

generating an equalizer signal that, when combined with the electrical signal, reduces unwanted modes in the electrical signal; and

combining the equalizer signal with the electrical signal.

26. The method of claim 25, wherein the unwanted modes are caused by differential mode dispersion in the multimode optical fiber.

27. The method of claim 25, further comprising the steps of:

determining a symbol represented by the electrical signal; and

outputting the determined symbol an output signal.

28. The method of claim 27, wherein the step of generating an equalizer signal comprises:

receiving at least a portion of the output signal as a feedback signal;

delaying the feedback signal;

multiplying the delayed feedback signal by at least one weight; and

combining weighted signals to generate the equalizer signal.

29. The method of claim 28, further comprising the step of determining the at least one weight during a training mode.

30. The method of claim 29, wherein the at least one weight is determined based on a difference between the determined symbol and a symbol transmitted by the multimode optical fiber.